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STATINTL

29 JAN 1974

*File Marine I
Environment*

Mr. V. Kh. Dubchak
Chief, Technical Administration
Ministry of Merchant Marine, USSR
ul. Zhdanova 1/3
Moscow tsentr, USSR

Dear Mr. Dubchak:

My letter of 26 December 1973 noted that we would shortly forward a recommendation for a joint program to develop standard test procedures to evaluate the chemical and physical effectiveness of chemical dispersing and collecting agents which would meet the objectives of subparagraph 4(c)(2) of our Joint Agreement of 31 August 1973.

The recommended joint program has been prepared and is attached for your consideration. It represents our thoughts relative to program goals and the sequence for their accomplishment. The proposed joint program consists of five phases and is directed for accomplishment in 1974; however some aspects of the program could be extended into 1975. In reviewing the program also note that Phase IV - Biological Effects is scheduled for accomplishment by the Working Group on the Effects of Pollutants on Marine Organisms. This is in consonance with item 4,d) of our 31 August 1973 agreement.

Obviously much detail work related to definition of specific tasks to be accomplished by either the U.S. or USSR sides will be required to implement the joint program. Thus timely execution of Phase I must be accomplished if the program is to be completed in 1974.

Your comments concerning the recommended joint program are requested. In addition, suggestions concerning specific task assignments for the respective U.S. and USSR scientific groups would be helpful. Pending receipt of your comments and suggestions, we will also make an initial list of specific tasks.

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Sincerely,

Sidney A. Wallace

SIDNEY A. WALLACE

U. S. Chairman, Joint Working Group
on Marine Pollution from Shipping

- (1) Proposed 1974 Joint Program
- (2) Standard Dispersant Effectiveness and Toxicity Tests,
EPA-R2-73-201, May 1973

to:

Approved For Release 2005/04/12 : CIA-RDP79-00798A001090010022-2
Members, U. S. Delegation, Joint Working Group on Marine Pollution
Shipping

"To Develop Standard Test Procedures to Evaluate the Chemical and Physical Effectiveness of Chemical Dispersing and Collecting Agents"

(This joint program has been prepared pursuant to item 4.c)2) of the minutes of Agreement of the Joint US/USSR Working Group on Marine Pollution from Shipping of 31 August 1973)

Phase I - Establishment of Procedures and Laboratory Quality Control

This phase will primarily consist of establishing the specific tasks which the US side and the Soviet side will undertake during 1974. Also laboratory quality control liaison will be established to ensure accuracy and reproducibility in all analytical methods and test procedures. An exchange of visits to each laboratory is proposed prior to proceeding with the other phases of the project.

Phase II - Development of Laboratory Effectiveness Test

This phase is subdivided into two areas, one relating to the testing of dispersants and the other relating to Surface Collecting Agents (SCA) or chemicals which limit the area of oil spills on water. The following are descriptions of the general tasks which are being proposed for each of these types of chemicals:

1. Dispersants

A. The Standard Effectiveness Test (SET) as described in EPA Report EPA-R2-73-201, May 1973, is conducted at $23^{\circ}\text{C} \pm 1^{\circ}$. A better understanding of dispersant effectiveness is needed at low water temperatures that could be encountered in the northern U.S., Alaska, or the USSR. It is proposed to perform the SET with a variety of dispersants at 5°C and 0°C with standardized seawater. The testing program would have a primary objective of determining accuracy and reproducibility of the SET at these lower temperatures and gather data on as many different dispersants as possible.

B. In cold regions it is possible that stockpiles of dispersants could freeze and thaw prior to their use in an oil spill cleanup. Little is known about dispersant effectiveness after thawing. It is also proposed to perform the SET at 23°C, 5°C, and 0°C with thawed samples. It is postulated that the dispersants most likely to become frozen are those using water as a solvent rather than those using alcohols or petroleum distillates.

C. Work to be performed in the first two tasks should include a variety of dispersants employing different solvent formulations such as water, alcohol, or petroleum distillates. This will result in an array of effectiveness data by differences in fundamental chemical formulation which can be correlated with toxicity and other environmental data.

2. Surface Collecting Agents (SCA's)

A. At present, the U. S. Naval Research Laboratory (NRL) has published the only laboratory methods for assessing the effectiveness of SCA's for controlling oil slicks. Greater understanding of this method and its relationship to field conditions is needed. As an initial step, it is proposed that the NRL methods be reviewed to determine the desirability of conducting additional laboratory testing or going directly into a test tank scale or field scale program to assess effectiveness of currently available chemicals.

B. The U.S. currently differentiates between SCA's and dispersants by requiring that SCA's be at least 75 percent insoluble. It is proposed to evaluate the validity of this test and recommend any revisions or new testing approaches.

C. Little is currently known of the horizontal and vertical distribution pattern of SCA chemicals in the water column. An improved understanding of this pattern would aid in the establishment of application rates and the determination of environmental effects. Changes in the distribution pattern when the SCA is applied in the presence of various oil types and when oil is not present should also be investigated.

Phase III - Field Testing

Standardized laboratory test procedures have significant value when comparing one chemical against another to determine their effectiveness; however, under actual field conditions the result may be different because of varying environmental factors such as wind, temperature, salinity, wave action, presence of debris, shoreline conditions, tidal action, water surface velocity and interference of other pollutants. It is therefore proposed to correlate the laboratory test with actual field effectiveness studies. A study plan will need to be developed after completion of Phases I and II to undertake a joint field investigation of the effectiveness of dispersant and surface collecting agents under controlled spill conditions.

Phase IV - Biological Effects

The Standard Effectiveness Test for dispersants includes procedures to determine the toxicity of dispersing type chemicals on aquatic organisms, however, no test has been developed for surface collecting agents. Upon completion of the effectiveness test for SCA it is proposed to assess the biological effects of these chemicals for a variety of oils, application rates and environmental factors.

(Note: This phase will be undertaken in accordance with item 4, d) of the Minutes of Agreement of the Joint US/USSR Working Group on Marine Pollution from Shipping. The co-chairman should recommend to their respective co-chairman on the Working Group on the Effects of Pollutants on Marine Organisms that appropriate studies be undertaken to determine the biological effects of selected surface collecting agents.)

Phase V - Operations Manual

Based upon the findings of Phases I-IV it is proposed each country develop an operations or user manual, as desired, which will describe the application techniques for both dispersants and surface collecting agents; the influence of environmental factors such as wind, debris, type of oil, etc.; effectiveness of the various types of chemicals; biological effects; and other limiting factors. Since there may be some delay in obtaining the biological effect information from the Working Group on the Effect of Marine Pollution it may be desirable to develop the manual in two sections, one relating to the physical, chemical aspects and a second section on biological effects.